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FHWA-01-11130-19

Docket Number: FHWA-2001-11130
Work Zone Safety

Attached are comments from the Virginia Department of Transportation to the Advance Notice of Proposed Rulemaking, Docket Number FHWA-2001-11130, on Work Zone Safety. If there are any questions dealing with our response to this ANPRM, please feel free to contact me at 804-371-6672, or at www.David.Rush@VirginiaDOT.org.

Sincerely,

David B Rush

David B. Rush
Engineer I
State Work Zone Safety Coordinator

VDOT's Response to FHWA ANPRM
23 CFR Part 630
FHWA Docket No. FHWA-2001-11130

Answers to General Questions:

1. Should there be a National policy to promote improved mobility and **safety** in highway construction and maintenance? If so, should the National policy be incorporated into the regulation or issued separately as guidance that outlines guidelines and best practices for implementation?

Yes, we believe there should. The National policy should be issued separately as guidance that outlines best practice and guidelines for implementation. If would be difficult to address and handle all situations in a regulation. Engineering judgment is required on a project-by-project basis.

2. Are the current provisions of 23 CFR 630, subpart J adequate to meet the mobility and **safety** challenges of road construction and maintenance projects encountered at all stages of project evolution? If they are not adequate, what are the provisions and/or sections that need to be enhanced and/or modified to ensure mobility and **safety** in and around **work** zones?

For the most part, we believe they are. However, we support making changes and/or some of the recommendations in this proposed rule making. They include stratification of work zone regulations to reflect varying levels and durations of risks to road users, a common National definition for the term "work zone" as well as training for law enforcement personnel, support by FHWA in life-cycle cost analysis and alternative project scheduling, and others as listed below.

3. Should **work zone** regulations be stratified to reflect varying levels and durations of risk to road users and workers, and disruptions to traffic? What would be the most appropriate stratification factors (e.g., duration, length, lanes affected, Average Daily Traffic (ADT), road classification, expected capacity reduction, potential impacts on local network and businesses)?

Yes, they should. Stratification factors should include: 1) ADT, 2) Expected Capacity Reduction, 3) Delay (and costs) to Motorists, 4) Duration, 5) Lanes Affected, and 6) Road Classification.

4. Currently, there are several definitions for **work zone**, as defined by the MUTCD, ANSI D16 (proposed), NCUTLO and NHTSA. These definitions, even though similar in basic structure and implication, differ in length and the degree of detail addressed. Should there be a common National definition for **work zone** to bring about uniformity? If so, what should the common National definition be?

Yes, there should be a national definition. We propose the following definition: ***"Work Zone - An area of a roadway with construction, maintenance or utility work activites of various durations. A work zone extends from the first warning sign or rotating/strobe light on a vehicle to the end road work sign or last traffic control device. Work Zones may or may not involve workers or equipment on or near the road."***

5. How, if at all, are impacts to road users due to road construction and maintenance part of the management and operations considerations that are addressed in transportation plan development?

On selected, high traffic volume projects (usually interstate projects), special management and operation plans have been implemented. These include the use of incentive and disincentive clauses to expedite the work, A + B type bidding taking both project cost and user delay into consideration, using public input into determining the construction strategy and least impact to the business community, and extensive public awareness campaigns to name a few.

6. To what extent should the metropolitan and statewide transportation planning processes address cross-cutting policy issues that may contribute to increases in project costs (for example, the use of more durable materials, life-cycle costing, complete closure of facilities, information sharing on utilities, etc.)? Is it appropriate to consider the impact of construction and maintenance projects to road users in planning for future roadway improvements at the metropolitan level? At the statewide level? At the corridor level?

We should have the right to address this at the planning stages of the project. Many "down the road" maintenance problems could be avoided if more durable materials and life cycle costing were taken into account in the design phase, as opposed to focusing on the present bottom line cost. There should be flexibility in the Federal funding process to allow the use of durable materials and enhanced design strategies to reduce future maintenance costs.

The impact of construction and maintenance projects to road users should be handled at the corridor level. Having a macroscopic approach to the impact of users will only over inflate (or underestimate) the project costs. The most efficient use of funds may result when examining improvements at the corridor level.

7. What data and methods are currently available to address the above considerations? What else would be needed to support such considerations in the metropolitan and statewide transportation planning processes? At the corridor level?

We recommend using NTPEP data, historical data, best practices, and research reports for determining the use of more durable materials or life-cycle costs. User costs (hard and soft – air quality, gasoline, wear and tear, etc.) should also be used when determining complete closure of facilities versus partial closures over longer periods of time. The use of incentive/disincentive initiatives should be encouraged on a project-by-project level on improvements to corridors.

8. How can the FHWA encourage agencies to incorporate the above considerations (life-cycle cost analysis, alternative project scheduling and design strategies, etc.) in the decision making process for evaluating alternative project designs? What are the most appropriate ways to include these considerations in project design?

In the past, the FHWA has had a tendency to reject certain ideas as "cost prohibitive" to the construction allocation, though life-cycle costing could justify an approach other than that which would be typical. If the FHWA were to issue a statement that LIFE CYCLE COSTING, USING MORE DURABLE PRODUCTS, COORDINATING PROJECTS and ESTIMATION OF USER COST would be given more credence than in the past; and then carry through with such, it would be a helpful tool in encouraging the practices.

9. Can user cost be a useful measure to assess alternative means to design and implement **work** zones? What weight should agencies assign to user costs as a decision making factor in the alternatives evaluation process? Should analytical tools, such as QuickZone, etc., be used for the evaluation of various design alternatives and their estimated impact to the public? What other impact measures (delay, speed, travel time, crashes) should agencies estimate and use for alternatives evaluation?

Yes, user costs should be taken into consideration. Not sure at this time the weight that should be assigned to user costs. Delay should also be a measure. Another measure is internal coordination with other state and municipal agencies when developing work zones that might impact one another. Just because the city is working in their right-of-way, the resulting spillback might be back onto the state's facility causing a highly hazardous situation. Analytical tools such as QuickZone may be used on certain, selected projects, but should not be made mandatory for all projects.

10. Given the fact that utility delays have been cited as roadblocks to efficient project delivery, what should be done to address this issue?

Better coordination between utilities and state/federal agencies. Allowing utilities to work simultaneously on large projects with road building contractors in areas where they would not conflict would help. Allowing utility work to begin prior to issuance of final plans would also quicken the process.

11. The current regulation specifies the requirement for TCPs for work zones, but does not address the issues of sustained traffic management and operations, or traffic enforcement methods and partnerships. Should the scope of TCPs be expanded to include such considerations? What are the most relevant practices or technologies that should be considered in planning for traffic management, enforcement and operations? What are the most appropriate ways to facilitate the inclusion of such considerations in traffic control planning?

TCP's could be expanded to include sustained traffic management and operations on selected, high traffic volume projects, such as interstate widening and rehabilitations. We have not had the chance to use and evaluate advanced ITS technology devices as of

yet, but we do use police enforcement on many high volume projects. Current traffic management and operations strategies are being used on the I-95 Springfield Interchange project in Northern Virginia, and will be evaluated upon completion of the project.

12. Should TCPs address the security aspects of construction of critical transportation infrastructure? Should TCPs address the security aspects of **work zone** activities in the vicinity of critical transportation or other critical infrastructure?

This is a sensitive area that requires special attention. Certainly reinforced elements in the vicinity of critical infrastructures (tunnels, bridges, military bases) should be examined and addressed under these current circumstances. Coordination with other agencies should be mandatory.

13. How should TCPs address ADA requirements?

TCP's should address three considerations in planning for pedestrian safety: 1) They shall not be led into direct conflicts with work site vehicles, equipment, or operations; 2) They shall not be led into direct conflicts with mainline traffic moving through or around the work site; and 3) They shall be provided with a safe, convenient travel path that replicates as nearly as possible the most desirable characteristics of sidewalks and footpaths.

All pedestrians need protection from potential injury and a smooth as possible, clearly delineated travel path. The need for all pedestrian access and mobility (including all forms of ADA) should be examined on every project from the beginning and throughout the life of the project.

14. Should more flexibility be allowed on who develops TCPs--State DOTs, municipalities, contractors or law enforcement agencies--and how should the responsibility for developing TCPs be assigned? Should certification be required for TCP developers? How can the owners and contractors share the roles, risk and rewards in developing TCPs and implementing and operating **work** zones?

More flexibility should be allowed for contractors to design TCP's after project award has been made and/or prior to construction, with agency review and approval process. Although TCP's by designers are a best guess attempt at how the project may be built, the contractor has based his bid proposal on exactly how he plans to perform the work and manage traffic. A certification for TCP designers would establish a benchmark for ability and understanding, and should be required if a reasonable, affordable course could be designed and supported by the FHWA. We believe that contractors who participate in the TCP process should be rewarded for their time and effort, which usually results in quicker completion time with fewer dangers to employees and the traveling public.

15. To ensure roadway mobility and **safety** and **work** area **safety**, should mobility and **safety** audits be required for **work** zones?

Yes, we believe that spot safety audits should be performed once the recommendations resulting in this ANPRM have been made and implemented.

16. How can we better communicate the anticipated **work zone** impacts and the associated mitigation measures to the public? Who--the State, local government, contractor, or other agency--should be responsible for informing the public?

Better communication could be obtained through public meetings, electronic media (internet, television, radio) and print (newspaper, local business papers), and through an agency hotline. This should be a partnership between city, state, and contractor when the project is an urban project. Large state projects could use the contractor to have a coordinated media effort. Funding at the federal level for media outreach would also help in communicating the impacts of work zones to the public.

17. Should projects with substantial disruption include a public communication plan in the project development process? If so, what should such a plan contain?

Yes, all major, traffic disrupting projects should have a public communication plan. The plan should include point of contact names and telephone numbers, scheduled project updates, and a review of what materials (flyers, posters, internet web page) may be needed. The need for a public communication plan should be determined by the agency administrating the contract.

18. Should States and local transportation agencies report statistics on the characteristics of **work** zones (such as number of **work** zones, size, cost, duration, lanes affected, ADT, road classification, level of disruption and impacts on local network and businesses) to appropriate State or Federal agencies? If so, in what ways do you think this would be beneficial?

Although some of this information may be helpful in conducting research into the causes of work zone crashes, and may result in more consistent data collection from state to state, we are not sure if the benefits would outweigh the investment of time and effort needed to collect this information. If the development of a statistical database on work zone characteristics resulted in effective evaluation of work zone traffic control, and development of best practices based on field conditions, then it may be beneficial. However, it would consume a great deal of time and effort!

19. Should States and local transportation agencies report statistics on the mobility performance of **work** zones? Are typical mobility measures, such as, delay, travel time, traffic volumes, speed and queue lengths appropriate to analyze **work zone** mobility performance? What are the top three measures that are most appropriate?

Although these measures may help in the development of mobility management plans, we currently do not believe this would be a good investment of time and money for most projects. The cost of the devices needed to measure these items (delay, travel time, traffic volumes, speed and queue lengths) would greatly add to the cost of the project. However,

selected projects, which would result in a cost benefit for evaluating work zone traffic control and management, may be considered and funded by the FHWA.

20. Are the currently used measures for **safety** (typically, crashes, fatalities and injuries) appropriate to analyze **work zone** performance? If not, what other measures should be considered? Are current mechanisms for collecting this information adequate? If not, how can we improve them?

NO, there is a lack of consistency nationwide in reporting work zone crashes, yet alone in measuring and analyzing the safety of work zones based on crash data. Current police accident forms need enhancing to better capture work zone data more consistently and effectively. We've seen in many instances that crashes were not coded as occurring in work zone locations, when sketches on the crash form clearly showed that they were. In other instances, crashes coded as occurring on "roadway under repair" were actually not in a work zone location. Work zone training of law enforcement officers is also needed to better understand what is and is not a work zone crash (see answer to Question # 4 – Definition for Work Zone).

Who is capturing this data and where it is coming from is also questionable. Based on our review of work zone crashes for the year 2000, we found we had 10 work zone fatalities. According to FARS, we had 21 work zone fatalities. No one at FARS can tell us where the other eleven fatalities they have came from.

For better work zone safety analysis, other factors such as number of work zones and ADT should also be reviewed and evaluated.